

WHAT IS CLAIMED IS:

1. A method of enhancing cell-cell interaction, comprising the step of expressing in a cell a vascular endothelial growth factor and type I collagen inducible protein (VCIP) having the sequence of SEQ ID NO:13.
2. The method of claim 1, wherein said cell-cell interaction is mediated by integrin ligand.
- 10 3. The method of claim 1, wherein said cell has altered motility as a result of expressing said VCIP.
4. The method of claim 1, wherein said VCIP is encoded by a gene delivered to said cell by a viral vector or a non-viral gene delivery system.
- 15 5. The method of claim 4, wherein said viral vector is an adenoviral vector or a retroviral vector.
6. The method of claim 4, wherein said non-viral gene delivery system is liposome or a high pressure gene delivery system.
- 20 7. The method of claim 1, wherein said cell-cell interaction contributes to a biological process selected from the group consisting of normal cell cycle progression, unwanted cell cycle progression, vascular malformation, expansion of atherosclerotic lesions, invasion of tumor cells, inflammation, cell motility, and angiogenesis.
- 25 8. A method of inhibiting cell-cell interaction, comprising the step of blocking the binding of integrins to cell surface vascular endothelial growth factor and type I collagen inducible protein (VCIP).

9. The method of claim 8, wherein said cell-cell interaction is mediated by integrin ligand.

10. The method of claim 8, wherein said binding is blocked by an antibody directed 5 against a peptide derived from said VCIP, wherein said peptide comprises a CRGDD sequence.

11. The method of claim 10, wherein said peptide has the sequence of SEQ ID NO:2.

10 12. The method of claim 8, wherein said binding is blocked by a peptide derived from said VCIP, wherein said peptide comprises a CRGDD sequence.

13. The method of claim 12, wherein said peptide has a sequence of SEQ ID 15 NO:20 or SEQ ID NO:23.

14. The method of claim 8, wherein said cell-cell interaction contributes to a biological process selected from the group consisting of normal cell cycle progression, unwanted cell cycle progression, vascular malformation, expansion of atherosclerotic lesions, 20 invasion of tumor cells, inflammation, cell motility, and angiogenesis.

15. A method of treating a patient having a pathological condition resulted from integrin-mediated cell-cell interaction, said method comprises the step of administering to said patient an agent that blocks the binding of integrin to cell surface vascular endothelial growth 25 factor and type I collagen inducible protein (VCIP).

16. The method of claim 15, wherein said binding is blocked by an antibody directed against a peptide derived from said VCIP, wherein said peptide comprises a CRGDD sequence.

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17. The method of claim 16, wherein said peptide has the sequence of SEQ ID NO:2.

18. The method of claim 15, wherein said binding is blocked by a peptide derived
5 from said VCIP, wherein said peptide comprises a CRGDD sequence.

19. The method of claim 18, wherein said peptide has the sequence of SEQ ID NO:20 or SEQ ID NO:23.

10 20. The method of claim 15, wherein said cell-cell interaction contributes to a biological process selected from the group consisting of normal cell cycle progression, unwanted cell cycle progression, vascular malformation, expansion of atherosclerotic lesions, invasion of tumor cells, inflammation, cell motility, and angiogenesis.

15 21. The method of claim 15, wherein said pathological condition is selected from the group consisting of stroke, thrombosis, tumor growth, metastasis, arthritis, cardiac infarction, psoriasis, diabetic retinopathy, inflammation, and angiogenesis.

20 22. A peptide derived from vascular endothelial growth factor and type I collagen inducible protein (VCIP) that has the sequence of SEQ ID NO:13, wherein said peptide comprises a CRGDD sequence.

23. The peptide of claim 22, wherein said peptide has 49 amino acid residues.

25 24. The peptide of claim 22, wherein said peptide has the sequence of SEQ ID NO: 20 or 32.

25. A vector comprising nucleotide sequence that encodes the peptide of claim 22.

26. The vector of claim 25, wherein said peptide has the sequence of SEQ ID NO: 20 or 32.

27. An antibody directed against the peptide of claim 22.

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28. The antibody of claim 27, wherein said peptide has the sequence of SEQ ID NO: 2.

10 29. A diagnostic kit useful for detecting vascular endothelial growth factor and type I collagen inducible protein (VCIP) in an individual, said kit comprises an antibody directed against said VCIP or against a fragment of said VCIP.

15 30. The kit of claim 29, wherein said fragment of VCIP has a sequence selected from the group consisting of SEQ ID NOs: 2, 20 and 32.

31. The kit of claim 29, wherein said individual has a disease selected from the group consisting of pathological angiogenesis, inflammation, arthritis, psoriasis, atherosclerosis, and metastatic disease.

20 32. A method of inhibiting angiogenesis and the formation of capillaries in a patient in need of such treatment, comprising the step of administering to said patient a pharmacological effective amount of antibody directed against a peptide derived from vascular endothelial growth factor and type I collagen inducible protein, wherein said peptide comprises a RGD sequence.

25 33. The method of claim 32, wherein said peptide has the sequence of SEQ ID NO: 2.

30 34. A method of inhibiting angiogenesis and the formation of capillaries in a patient in need of such treatment, comprising the step of administering to said patient a

pharmacological effective amount of a peptide derived from vascular endothelial growth factor and type I collagen inducible protein, wherein said peptide comprises a RGD sequence.

35. The method of claim 34, wherein said peptide has the sequence of SEQ ID
5 NO:20 or SEQ ID NO:23.

36. A method of inhibiting angiogenesis and the formation of capillaries in a patient in need of such treatment, comprising the step of administering to said patient a pharmacological effective amount of antisense oligonucleotides against the transcripts encoding
10 vascular endothelial growth factor and type I collagen inducible protein.

37. A method of enhancing cell-cell adhesion junction formation in a patient, comprising the step of administering to said patient a vector encoding vascular endothelial growth factor and type I collagen inducible protein (VCIP).

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38. The method of claim 37, wherein said vector is a viral vector or a non-viral gene delivery system.

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39. The method of claim 37, wherein said patient has compromised blood-brain barrier functions.

40. A method of enhancing angiogenesis in a patient, comprising the step of administering to said patient a vector encoding vascular endothelial growth factor and type I collagen inducible protein (VCIP).

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41. The method of claim 40, wherein said vector is a viral vector or a non-viral gene delivery system.